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# Lab know-how nets six R&D 100 Awards

By Stephen Wampler  
NEWSLINE STAFF WRITER

For the second straight year, Laboratory researchers have rolled up six top awards for cutting-edge technologies with commercial potential.

Six teams of LLNL researchers, including four with industrial collaborators, won plaques from the trade journal *R&D Magazine* out of the top 100 industrial inventions awarded worldwide for 2002.

This year's R&D 100 awards, often called the "Oscars of invention," were presented Thursday night during a black-tie dinner at the Navy Pier Convention Center in Chicago.

"We are very pleased by our continued success in producing leading industrial inventions that benefit the nation and U.S. industry," said Hal Graboske, LLNL acting deputy director for Science and Technology. "These technologies reflect the Laboratory's tradition of multidisciplinary teams working together to solve important national problems."

With its six R&D 100 awards

See R&D, page 8



S&TR

BASIS features air samplers that suction air through filters and thereby collect any regional microbes onto a filter's surface. Above, the bar code of a single filter is scanned.

# NIF's Jack Campbell wins award for laser glass work

By Bob Hirschfeld  
NEWSLINE STAFF WRITER

The American Ceramics Society honored Jack Campbell, a veteran Lab researcher, this week with the George W. Morey Award, presented at the society's "Glass and Optical Materials Division" annual meeting in Corning, N.Y.

The award cites Campbell's "work and leadership in the development, characterization, and manufacturability of phosphate laser glass for high-peak power lasers."

Campbell, now the group leader for Advanced Optical Materials for the National Ignition Facility, has been at LLNL since 1975. In 1980, he joined the Laser Program. His early work involved development of glass and polymer targets for the Nova laser. But for most of the past 20 years, his mission has been to develop ever higher-quality optics needed to transport and amplify beams for Nova, Beamlet and now NIF.

Laser glass is one of the optical materials that dominated his attention, he says, because of the complexity of the glass chemistry and physics as well as the difficulty in its manufacture.

Unlike the silica-based glass in standard building windows (which starts as sand), laser



Jack Campbell

See CAMPBELL, page 7

# Temporary food operations begin in early November for Central Café transition

Construction of the new Central Café will bring changes in service at the current Central Café. Beginning, Nov. 7, the Central Café will be closed, but a temporary food service operation will begin on Nov.10 in the main dining room of the current café.

Cleaning and relocation of the existing Central Café equipment begins on Nov. 7. This phase will involve closing the kitchen and server areas of the Central Café. Innovative Business and Information Services (IBIS) employees, Eurest staff and ES&H have designed a temporary food service operation for the Central Café that will use the main dining room of the current café. In an

See CAFÉ, page 7

# Adaptive optics sharpens view of the universe

A major milestone in astronomical history took place recently at the W.M. Keck Observatory, when scientists, for the first time, used a laser to create an artificial guide star on the Keck II 10-meter telescope to correct the blurring of a star with adaptive optics.

Laser guide stars have been used on smaller telescopes, but this is the first successful use on the current generation of the world's largest telescopes.

Installed in 1999, the Keck adaptive optics system has enabled astronomers to minimize the blurring effects of the Earth's atmosphere, producing images with unprecedented detail and resolution. The adaptive optics system uses light from a relatively bright star to measure the atmospheric distortions and to correct for them, but only about 1 percent of the sky contains stars sufficiently bright to be of use. The new laser guide star will enable Keck astronomers to study nearly the entire sky

See KECK, page 7



W.M. KECK OBSERVATORY

First light image of the Keck laser guide star adaptive optics system. The lens-like nebula at the upper left is a disk of dust and gas surrounding the young star HK Tau B. The star is hidden from direct view, seen only in light reflected off the upper and lower surfaces of the disk.



Minds matter

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Fellow sees strength in metals

— Page 4



Safety first

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## LAB COMMUNITY NEWS

### Weekly Calendar

Technical Meeting Calendar, page 4

Friday  
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Applications for the **Women's Association Scholarship Program** are due today. The program provides financial support to

LLNL employees in their pursuit of education as a means of career and personal advancement. For further information, contact scholarship program chairperson Joni Schuld (L-1, schuld2@llnl.gov or call 2-4168) or go to the scholarship program Website — <http://www-r.llnl.gov/lllwa/scholarship.html>

Tuesday  
**21**

Kent Cullers, director of R&D for the Search for Extraterrestrial Intelligence (SETI), will discuss the **radio search for signs of extrater-**

**restrial** in a presentation at 1:15 p.m. today in the Bldg. 123 auditorium. Blind since birth, Cullers earned his Ph.D. from UC Berkeley in 1980, becoming the first totally blind physicist in the world. The film "Contact," featured a character based on Cullers. The Work/Life Programs Office sponsors the presentations.

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A **Fidelity retirement counselor** will be available today and Wednesday to assist you with assessing the current state of retirement accounts, learning how to diversify, planning asset allocation, and identifying income strategies. Fidelity Investments Mutual Funds are available to UC's workplace retirement plan participants in addition to the UC-managed investments pools. To set up a one-on-one consultation with a Fidelity representative, call 800-642-7131. When calling, be sure to specify that you are an LLNL employee.



Laboratory scientists, researchers, post-docs and student employees are cordially invited to attend the fourth annual poster presentation by

participants in the **Student Employee Graduate Research Fellowsh (SEGRF) Program**, 3-5:30 p.m. on Friday, Oct. 24, in the South Cafeteria. For information, call the University Relations Program office, 3-9225, or 2-0394.

...

The Work/Life Programs Office is offering a brown bag session on **"Organizer to the Rescure: Caregiver's Special,"** at noon Tuesday, Oct. 28, in Bldg. 571, room 1301. The workshop will help employees learn how to help organize caregivers and seniors including clutter control, preparation for downsizing, office reorganizations, filing systems, family financial tracking and bill paying. For more information or to pre-register, contact Carol Sandoli, 2-9543, or sandoli1@llnl.gov.

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Friends of the Livermore Library are hosting a book talk with local physicist, book collector and LLNL employee Paul Chrzanowski speaking about **"How the Printing Press Changed the World,"** at 7:30 p.m. Friday, Nov. 14, at the Civic Center Library, 1000 S. Livermore Ave.

### A meeting of the minds



MARCIA JOHNSON/IBIS

Laboratory women scientists and engineers recently met with Rep. Ellen Tauscher's new district director, Jennifer Barton. Front row, from left: Ellen Raber, Cynthia Conrado, Monya Lane, Kathy Cromwell, Dorothy Bishop and Melanie Elder. Back row, from left: Rebecca Failor, Tamara Jernigan, Evi Dube, Pat Berge, Jennifer Barton, Sabre Coleman and Lori Turpin.

### IN MEMORIAM

#### Ima June Shockley Gretler

Ima June Shockley Gretler died Oct. 11. She was 66.

Gretler was born in Brookings, Ore., on Jan. 2, 1937. She began her career at the Laboratory in 1979 as a mechanical technician for the Shiva laser. She went on to support mechanical engineering on underground nuclear testing at the Nevada Test Site. She then worked as a facilities coordinator supporting the Environmental Protection Department before working in the Director's Office for seven years. She retired in April 1990.

She had recently returned to Oregon and enjoyed cooking, traveling, entertaining and being

with friends.

She is survived by her husband of 35 years, Richard Gretler of Bend, Ore.; her mother, Erma Shockley or Rexburg, Idaho; son, Cory Butler; and stepchildren, Mark, Lareen and Todd Gretler, grandchildren, Ethan, Ellie and Sam Butler and Kara Koch; and cousin, Joanne Donaca of Bend.

A remembrance service will be held Saturday, Oct. 18, at noon at her ranch at 65520 Gerking Market Road, Bend, Ore.

In lieu of flowers, donations may be made to The Susan G. Komen Foundation for Breast Cancer Research.

### Is it time for your Security Refresher Briefing?

All LLNL employees and contractors are reminded to complete their annual Security Refresher Briefing in a timely manner. The briefing is available on the Safeguards & Security Program Website at <http://www-r.llnl.gov/securityprogram/index.html>, or type in the short cut: security. Your annual security briefing is due exactly one year from the date you took it the previous year.

People who are exempt from this requirement are visitors; off-site contractors without clearances; contractors whose clearances are held at other DOE facilities; and DOE employees. In addition, any employee who has taken the Initial Security Briefing (part of the New Employee Orientation) or the Comprehensive Briefing will take the Security Refresher Briefing one year from the date they last completed one of the two briefings. (Example: You took the Comprehensive Briefing on Aug. 20 of this year, you will not have to complete the Security Refresher Briefing until Aug. 20, 2004.) If you've taken both the Initial Security Briefing and the Comprehensive Briefing within the past year, your Security Refresher Briefing will be due one year from the date you took the Comprehensive Briefing.

To take the quiz on the LLNL internal Web testing system, you will need to enter your institutional ID and password. If you do not

have an Institutional ID and password, you can get them at [https://www-ais.llnl.gov/llnl\\_only/docs/menu/](https://www-ais.llnl.gov/llnl_only/docs/menu/)

Questions regarding the Security Refresher Briefing requirements should be directed to the LLNL Security Education Section at 3-8284 or 3-3300.

### Newsline

Newsline is published weekly by the Internal Communications Department, Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for Laboratory employees and retirees.

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## NEWS OF NOTE



# Lab responders participate in county-wide exercise

Laboratory emergency response organizations sprang into action last Thursday as part of a county-wide emergency exercise.

The exercise scenario saw Alameda County hit by a wave of terrorist attacks, with each city in the county responding to attacks in their jurisdictions and coordinating their actions with the county's Office of Emergency Services in Dublin.

In Livermore, a simulated truck explosion on Vasco Road just north of the Lab resulted in a hazardous airborne release wafting toward populated areas west of the Laboratory. Lab emergency responders assisted city agencies at the scene, and

the Lab activated its Emergency Operations Center in Bldg. 490. There, representatives from Hazards Control, Safeguards & Security, Public Affairs and Plant Engineering, among others, supported the Lab's emergency director in guiding Lab response to the incident.

This response included a simulated shelter-in-place order for Laboratory personnel, followed by a simulated evacuation of the site by non-essential personnel. The EOC also coordinated response activities with Sandia National Laboratory, and maintained contact with City of Livermore and Alameda County emergency

managers. A Lab public information officer was dispatched to the county's Office of Emergency Services to assist with emergency public information.

"This was another great opportunity for the Lab to train with our community emergency response partners," said Alan Casamajor, a Laboratory Emergency Duty Officer (LEDO) who served as the Lab's emergency director for this exercise. "The experience gained in these kinds of exercises will help ensure a well-coordinated, effective response in the event of a real community emergency."

## BRIEFLY

### Construction impacts B-4 parking lot

The LLNL Institutional Facility Manager's Office is constructing a two-story office building (Bldg. 242) to be located on the east side of Bldg. 241, in the B-4 parking lot. Construction of the site utilities for this building is scheduled to start on Nov. 10. The north and north-west portions of the B-4 parking lot will be cordoned off during the month of November because of site utilities construction activities. Beginning in December, the entire B-4 parking lot will be taken out of service. Alternate parking is available in the C-4, C-5W, B-7, and the new Z-5 lots.

For more information, contact Project Manager Danny Nguyen, 2-4883.

### Export Control Website revised

The Office of Classification and Export Control (OCEC) has revised its Export Control Website. (<http://www.llnl.gov/expcon/>) The Website will provide the information needed to comply with export controls: what they are; why they are important; and, how they apply to LLNL employees and the Laboratory as a whole.

Lab employees are not expected to become experts on export controls. But employees are expected to be aware of their existence, to know when a work situation poses export control considerations, and when and where to get guidance and assistance on export control matters.

### Disabilities Awareness Week events

- Paul Singleton of the Department of Defense's Computer/Electronic Accommodations Program (CAP) will discuss how the DoD has tried to make the federal government the model for employing people with disabilities since the 1990s in a presentation at 11 a.m. Tuesday, Oct. 21, in the Discovery Center Auditorium, Trailer 6525. Discover ways LLNL can become an employer of choice for people with disabilities.

- Kent Cullers, director of R&D for the Search for Extraterrestrial Intelligence (SETI), will discuss the radio search for signs of extraterrestrial in a presentation at 1:15 p.m. Tuesday, Oct. 21 in the Bldg. 123 auditorium. Blind since birth, Cullers earned his Ph.D from UC Berkeley in 1980, becoming the first totally blind physicist in the world. The film "Contact," featured a character based on Cullers. The presentations are sponsored by the Work/Life Programs Office.

- Beginning sign language classes will be offered from noon to 1 p.m. Mondays and Wednesdays starting Wednesday, Oct. 22, in Bldg. 571, room 2000. Intermediate sign language classes will be at noon starting Thursday

Oct. 23, in Bldg. 571, room 2001. There is no charge and no pre-registration required. For more information, contact Carol Sandoli, 2-9543.

### Connecting to security awareness

The latest edition of "Employee Security Connection," a quarterly newsletter produced by the National Security Institute, is now available to LLNL employees. You can view it at <http://www.llnl.gov/securityprogram/index.html>.

"Employee Security Connection" provides information on a variety of security topics. This issue includes articles on espionage, identity theft, security clearances and home security. If you wish to be on distribution for future editions of the "Employee Security Connection," contact Cathy Hastings at 3-8284 or <mailto:hastings1@llnl.gov>. The newsletter will continue to be available via the Safeguards & Security Website.

### Change in foreign travel close-outs

Effective Nov. 1, the procedure for Official Foreign Travel Trip Close-out will be changed. The new procedure will include a change in the process for submitting both actual cost reports and trip reports.

The distribution of the foreign travel trip reports will be the responsibility of the traveler. The traveler will submit a copy of the trip report to the Foreign Travel Office and send the other copies to the applicable internal and external programs.

The actual cost report has been automated in the Foreign Travel System (FTS) to allow for electronic submission to the Foreign Travel Office.

Detailed instructions for distributing trip reports and submitting the actual cost report can be found on the Foreign Travel Website ([http://www-r.llnl.gov/securityprogram/foreign\\_travel/index.html](http://www-r.llnl.gov/securityprogram/foreign_travel/index.html)) in the "Closing a Trip" section.

### Free flu vaccines

Flu vaccination time is here, and once again Health Services will provide vaccines to LLNL employees at no cost. In keeping with CDC guidelines, Health Services recommends that anyone who wants to lower their chances of getting the flu should consider a shot, especially people 50 years and older and individuals in high-risk categories (i.e., chronic medical conditions, such as cardiovascular or pulmonary disease, diabetes, asthma, renal disease or immunosuppressive disorders; women in their second or third trimester of pregnancy; Lab employees in a foreign travel program).

Through the first two weeks of November, the vaccine will be offered at "cafeteria clinics" and at afternoon walk-in clinics in Health Services (Bldg. 663). Staffing will be increased to reduce waiting time.

Cafeteria clinics will be held Oct. 22 (West), 11 a.m. to 1 p.m. Walk-in clinics will be held in Health Services Oct. 21-23, Oct. 28-30, Nov. 4-6, and Nov. 11-13. Hours are 1-4 p.m. for all walk-in clinics.

### Balancing work and family

A Lab-sponsored parenting class, Balancing Work and Family, is held every 2nd and 4th Tuesday, October through June, at noon. Class discussion focuses on effective parenting techniques for infants to 12-year olds and is facilitated by local parenting educator, Ruth Gasten. She has been teaching parenting classes for more than 30 years. She is the co-author of the book "Helping Children to Like Themselves" and teaches parenting education and self-esteem enhancement for schools, businesses and government agencies.

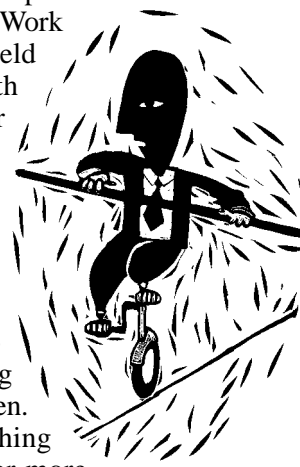
Meetings include both an open discussion of issues/problems currently affecting parents as well as information presented by Gasten on a particular topic chosen by the class participants. Topics include such things as what to do when parents disagree about child rearing, effective communication with your child, discipline and setting limits, building self-esteem, manners and respect for others, moral and character development, socialization and social skills, anger and tantrums, sex education, sibling rivalry, and child development stages.

The group shares experiences and resources to help one another become more effective parents. Classes are equally attended by moms and dads and are open to anyone on-site at no cost to the participant. Bring a brown bag lunch, and come join the lively and informative discussions.

The class meets in Bldg. 671 (Procurement), room 2000, the Granite room.

For additional parenting resources and information, check out the web page at [http://www.llnl.gov/OCM/parent/parenting\\_home.html](http://www.llnl.gov/OCM/parent/parenting_home.html)

For additional information, contact Michele Cardenas, 2-9543, or [cardenas7@llnl.gov](mailto:cardenas7@llnl.gov).







## NEWS YOU CAN USE

# Lab scientist honored for putting the heat on metal

By Bob Hirschfeld

NEWSLINE STAFF WRITER

**Superplasticity:** An unusually high elongation phenomenon exhibited by specially developed alloys containing small amounts of alloying agents to control grain size. At appropriate high temperatures and strain rates some fine grained ceramics and metals have exhibited tensile elongation of several hundred percent.

When it comes to studying the superplasticity of metals and ceramics, the Lab's T.G. Nieh is among the best.

He's been focused on the subject since the mid-'80s, co-authored more than 300 papers as well as a widely read textbook, and his research has led to advances in automotive and aerospace manufacturing processes.

In recognition of his work, he's being honored by the Minerals, Metals & Materials Society (TMS), receiving one of the organization's Fellows Awards. Although nearly 10,000 metallurgical and materials engineers, scientists, researchers, educators and administrators from more than 70 countries on six continents belong to TMS, there can never be more than 100 living fellows in the society at any time and only about five fellows



BOB HIRSCHFELD/NEWSLINE

Lab employee T.G. Nieh recently was named fellow of the Minerals, Metals & Materials Society for his expertise in superplasticity research.

are named each year.

Nieh began his career as a metallurgist after receiving his doctorate at Stanford in 1980. He joined LLNL in 1992 following 12 years at Lockheed Missiles and Space Co., and is now a senior scientist in the Chemi-

cals and Material Sciences Directorate.

His specialty is superplasticity, the high-temperature deformation of metal and ceramics. Under normal room temperature conditions, metal can be stretched so that it extends about 50 percent without fracturing.

But when the metal is heated, and its microstructure is modified, it can be stretched to 8,000 percent of its original length.

Nieh's challenge was to streamline the procedure and make it cost-effective so that it could be utilized on industrial assembly lines.

The answer turned out to involve adding nanometer-sized "second phase particles" to an alloy to refine its microstructure during the thermo-mechanical process.

Nieh says his technique is cost-effective, allowing manufacturers to create complicated shapes for cars and airplanes without the need for machining, riveting or welding. It's also environmentally friendly, eliminating scrap.

In naming Nieh a fellow, TMS cited his "contributions to the understanding of the superplasticity behavior of metals and ceramics, including high strain rate superplasticity and superplastic ceramics."

The honor will be bestowed at the TMS 133rd annual meeting in Charlotte, N.C. next March.

## Technical Meeting Calendar

Friday  
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### INSTITUTE FOR GEOPHYSICS & PLANETARY SCIENCE

"Ultraluminous Infrared Galaxies: Quasars / Ellipticals in Formation?" by Sylvain Veilleux, Cal

Tech. Noon, Bldg. 319, room 205 (all attendees must be badged). Contact: Wil van Breugel, 2-7195, or Sharon Taberna, 3-6290.

### PHYSICS & ADVANCED TECHNOLOGIES / CHEMISTRY & MATERIALS SCIENCE

"A Practical Cryodetector Mass Spectrometer for High Sensitivity Detection and Energy Resolution at High Molecular Mass," by Urs Matter, Comet AG, Switzerland. 11 a.m., Bldg 151, room 1209 (Stevenson Room, uncleared area). Contact: Matthias Frank, 3-5068

### CHEMISTRY & MATERIALS SCIENCE

"Microfabricated Biochemical Analysis Devices and Pathogen Detection," by Richard A. Mathies, UC Berkeley. 2 p.m., Bldg. 123 auditorium (CUF). Coffee and cookies will be served. Contact: Dave Eaglesham, 2-0486, eaglesham2@llnl.gov, or Kim Hallock, 3-3564, hallock1@llnl.gov.

Tuesday  
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### CHEMISTRY & MATERIALS SCIENCE, FRONTIERS IN CHEMISTRY AND MATERIALS SCIENCE

"Recent and Future Advances in the Manipulation of Single Molecules and its Applications to Biophysics," by Carlos Bustamante, Department of Physics, Department of Chemistry, Molecular & Cell Biology, Howard Hughes Medical Institute, UC Berkeley. 3:30 p.m., Bldg. 155 auditorium. For information on Bustamante and an abstract of his talk, please see Website: [http://www.cms.llnl.gov/cms\\_frontiers\\_ext/index.html](http://www.cms.llnl.gov/cms_frontiers_ext/index.html). Contact: Mike Fluss, 3-6665, fluss1@llnl.gov, or Kristine Ramirez, 3-4681, ramirez24@llnl.gov.

Thursday  
23

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Progress in Clustering," by Charles Elkan, UC San Diego. 9 a.m., Bldg. 3427, room 1220 (property protection area). Contacts: Tina Eliassi-Rad

(CASC), 2-1552, or Leslie Bills 3-8927. For more information see <http://www.llnl.gov/casc/calendar.shtml>.

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Statistical Models for Simulation Errors and their Role in Prediction and Uncertainty Quantification," by James Glimm, State University of New York, Stony Brook. 10 a.m., Bldg. 451, room 1025 (property protection area). For more information see URL (<http://www.llnl.gov/casc/calendar.shtml>). Contact: Lori Diachin (CASC), 2-7130, or Leslie Bills 3-8927.

Friday  
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### STUDENT EMPLOYEE GRADUATE RESEARCH FELLOWSHIP (SEGRF) PROGRAM

Laboratory scientists, researchers, post-docs and student employees are cordially invited to attend the

fourth annual poster presentation by participants in the SEGRF Program. 3-5:30 p.m., South Cafeteria. For information, call the University Relations Program office, 3-9225, or 2-0394.

### INSTITUTE FOR GEOPHYSICS & PLANETARY SCIENCE

"Gamma-Ray Astronomy of the Milky Way with GLAST," by Seth Digel, Stanford University. Noon, Bldg. 319, room 205. Contact: Wil van Breugel, 2-7195, or Josie Morgado, 3-4188.

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Simplification, Adaptivity and Conservation in Front Tracking Method," by Xiaolin Li, State Univer-

sity of New York at Stony Brook. 10 a.m., Bldg. 451, room 1025 (property protection area). For more information see URL <http://www.llnl.gov/casc/calendar.shtml>. Contact: Lori Diachin (CASC), 2-7130, or Leslie Bills 3-8927.

### CHEMISTRY & MATERIALS SCIENCE

"New Insights Into the Liquid Water Surface from X-Ray Spectroscopy of Liquid Microjets," by Richard J. Saykally, U.C Berkeley. 3:30 p.m., Bldg. 235, Gold Room. Coffee and cookies will be served at 3:20 p.m. Contact: Jim Tobin, 2-7247, or Rebecca Browning, 2-5500.

Thursday  
30

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Efficient Solution of the Discretized S<sub>N</sub> Time-dependent Boltzmann Transport Equation on Parallel Platforms," by Douglas Swesty, State University of New York at Stony Brook. 11 a.m., Bldg. 451, room 1025 (property protection area). For more information see URL (<http://www.llnl.gov/casc/calendar.shtml>). Contact: Frank Graziani. 2-4803, or Leslie Bills, 3-8927.

### BIOLOGY & BIOTECHNOLOGY RESEARCH PROGRAM

"Host Gene Expression Responses to Biothreat and Pathogenic Agents," by Marti Jett, Walter Reed Army Institute of Research (WRAIR). 10:30 a.m., Bldg. 361 auditorium. Contact: Joo Kim, 4-3792, or Ray Mariella, 2-8905.

### The deadline for the next Technical Meeting Calendar is noon, Wednesday.

Send your input to [tmc-submit@llnl.gov](mailto:tmc-submit@llnl.gov). For information on electronic mail or the news-group [llnl.meeting](mailto:llnl.meeting), contact the registrar at [registrar@llnl.gov](mailto:registrar@llnl.gov).



NEWS OF NOTE



Hats off to ‘Team America’ in the Run for HOME

By Emmeline Chen

IBIS

“Come have fun and learn how we can help others,” says Al Moser, chair of the Run for HOME committee, who invites the entire Laboratory to participate in the 2003 Run for HOME, Wednesday, Oct. 29. The theme of this year’s run is “Team America — three Cheers for the Red, White and Blue,” and everyone is encouraged to dress up in theme-related costumes.

In past years, the Run for HOME has traditionally been held on Halloween. However, because Halloween 2003 falls on a Friday, the date for this year’s run was changed to accommodate employees with alternate work schedules.

The Run for HOME is the annual kickoff event for the Laboratory’s HOME (Helping Others More Effectively) Campaign. The Chemistry and Materials Science (CMS) Directorate is the sponsor of this year’s run, which features a HOME Fair with more than 130 nonprofit-agency booths.

Now in its 29th year, the HOME Campaign is one of the Tri-Valley’s largest charity campaigns, providing Laboratory employees with an opportunity to come together each year and assist those in need.

More importantly, the Run for HOME generates excitement about the HOME Campaign by bringing people to the HOME Fair, where they can learn firsthand about some of the nonprofit agencies featured in the HOME Campaign booklet. All employees are invited to visit the fair, which will be open from 11 a.m. to 1 p.m., so that they can meet agency representatives and find out how each agency supports our local community.

Nonprofit agencies received more than \$1.46 million from last year’s campaign, which had an employee participation rate of 49 percent. The Laboratory Services Directorate, the sponsor of the 2003 campaign, has set a goal of \$1.5 million and hopes that an even greater percentage of employees will support local charities through this year’s campaign.

Members of the Laboratory community may run, swim, rollerblade, or walk in the Run for



Al Moser, chair of the Run for HOME committee, models the 2003 HOME Campaign regalia. The Run for HOME is set for Oct. 29.

HOME. (Bicycles, scooters, and motorized vehicles are not allowed in the event.) All Run for HOME participants will receive free T-shirts and free snacks — bagels with cream cheese, fruit, energy bars, bottled water and juice. In addition, at the end of each race, participants may request Run for HOME certificates by filling out and turning in cards with their names and race times. Cards will be handed out at each finish line.

Runners at Site 300 will begin their 3,000-meter course at noon. An awards ceremony will follow, with donation-award certificates being given to the fastest male and female runners in the open and masters categories.

Participants at the Livermore site can choose between an 800-meter swim and a 3-kilometer course for runners, rollerbladers and walkers. Swimmers will start at 11 a.m. in the Laboratory pool and are then invited to visit the HOME Fair and gather with the other Livermore site partici-

pants at West Perimeter Drive, just outside parking lot Z-3, beside Bldg. 132.

Special guest Scott Haggerty, an Alameda County supervisor, and Laboratory Director Michael Anastasio will start the race for rollerbladers, runners and walkers at the Livermore site. Rollerbladers will begin skating at noon, followed by runners at 12:02 p.m., and then walkers.

Additional details and a map of the 2003 Run for HOME course at the Livermore site are available at <http://wwwr.llnl.gov/home2003/run.html>. Race participants will not need to have their badges touched and checked when re-entering the Laboratory because security officers will be stationed throughout the entire course to ensure that no one from outside the Laboratory joins the run.

After the race, donation-award certificates will be presented to the fastest male and female skaters, runners and swimmers in the open and masters categories.

A costume-judging station will be set up at the end of the Livermore site’s run course. Judges will determine the award-winners of the following categories: most patriotic, most colorful, most humorous and most creative. The

team with the best multiperson costume will also receive an award.

Music at the Livermore site will be provided by Rock Harbour, a classic-rock band made up of Laboratory employees and retirees: Rob Allen from the Computation Directorate; Brian Andresen, a recent CMS retiree; Ben Hindson from the Physics and Advanced Technologies Directorate; Tom Metz from the Engineering Directorate; and Laboratory retiree Mike Murphy.

Two Laboratory employee networking groups, the American Indian Activity Group (AIAG) and the Association of Black Laboratory Employees (ABLE), will sell food to raise money for their student scholarship funds. AIAG will offer Indian tacos for \$5, while ABLE will sell beverages for \$1 each. In addition, salads, wraps and sodas will be available for purchase from Eures Dining Services.e



MARCIA JOHNSON/IBIS

Traffic safety winner is poster perfect

Karen Rosenberg displays the emergency road repair kit she won in the recent Traffic Safety Contest held at the Laboratory. Den Fisher (left), associate director for Safety and Environmental Protection (SEP), and Dennis Barrett, chair of the Traffic Safety Committee, presented the kit. Rosenberg is a customer support representative in the Procurement and Materiel Department. Barrett drew her name from more than 200 entrants who correctly identified at least eight hazards or parking violations in the contest poster. The contest was conducted during September as part of SEP’s ongoing LLNL safety awareness program.



# CLASSIFIED ADS

See complete classified ad listings at  
<https://www-ais.llnl.gov/newsline/ads/>

AUTOMOBILES

1987 - ACURA Legend LS CoupeV6. 148K miles, very strong engine, lowered, 16in chrome wheels, PS,PW,PM, CC,CD,CASS,Sun Roof, interior needs TLC. \$3200 obo. 209-470-1971

1996 - AUDI A6 wagon AWD. Great family/ski car, Excellent condition. Sunroof, leather, more. Pearl white with taupe interior. 77K miles. \$11600 BO. 925-600-9775

2002 - Toyota CamryXLE, fully loaded,leather interior, 16,000 miles \$20,000 925-456-8855

1998 - Saturn SL, 120K miles, AC, AM/FM, 5sp manual. Great commute car 35+ MPG. Asking \$3000. Please leave message. 209-484-0701

1994 - Mazda Miata, black w/beige leather int., 5 spd., new Robbins top w/ glass window, PS,PB,PW,CC,AC, AM/FM/Cass, new tires. Excellent Condition. \$6700. 209-943-2166

2001 - Ford Focus LX, AC, Perfect Condition, Dealer prepd, low miles, white, \$6950 925-373-6870

1965 - Mustang, 289 V8 4-speed, 4B-carb., poppy red, great paint, rebuilt engine, in family 38 years. \$12,000. Offers considered. 510-537-6293

1997 - Chevy Monte Carlo, 92k miles, runs great, interior exlnt. new batt & alt. detailed maint history. \$3800 obo. 925-352-4248

1998 - ACURA 3.5 RL Special Edition, Black with Gray Leather, new Yokohama 420s, Chrome Alloy Wheels, 6CD, full power options, 38.9K miles, \$22.5 OBO 925-846-0645

1999 - Cadillac DeVille, Silver/grey, 38,500 miles, excellant condition, \$15,000. 925-443-6786

AUTOMOBILE ACCESSORIES

Car-top carrier, Sears X-Cargo, 50-1/2 x 37-1/2 and 17-1/2 deep. Like new, \$40 925-373-0314

2002 chevy silverado 16 inch rims with 235/75 goodyear tires. 19,000 miles on both. \$400.00 510-610-0134

Tailgater truck storage system for full size truck. \$300/obo. 925-449-0463

Parting 1984 BMW 325E, Drivetrain, Interior, MOMO wheels, misc. parts. Call for prices. 209-943-2166

Dee-Zee behind-the-seat storage unit for pickup truck, mutil-shelf, one locking compartment. \$25 925-455-8609

Aluminum OEM Ford Focus wheels, 16 x 7, 4 on 4-1/4, also fits: Contour, Escort, Mystique, Audi and Volvo, brand new condition, \$75. 925-443-3970

BICYCLES

Schwinn Paramount 60cm bike w/ Sun-tour and Shimano components \$150 925-606-0755

BOATS

Laser 2 Sailboat. Good condition, \$1850 925-455-4559

12 foot Gregor aluminum boat \$250.00 510-538-4881

CAMERAS

Canon Sure Shot 35mm auto-focus camera. \$25 925-455-8609

Canon AE-1 program, 50mm, 135mm, flash, manual all in very good conditions \$200.00 209-858-4422

ELECTRONIC EQUIPMENT

Computer keyboard, Kensington comfort type multimedia. Brand new, never used. \$10. 925-648-0671

Monitor, 17 inch Sony Color Trinitron Multiscan 200ES. Excellent condition. \$75. 925-648-0671

JVC Amp/equalizer and separate digital tuner. All for \$75 925-361-7111

Wireless mouse for PC or Mac, Kengington brand. Brand new, never opened. Paid \$50. \$20. 925-648-0671

Hitachi HB-101 breadmaker. \$25 925-455-8609

External SCSI 2 Gb hard drive w/ case. \$15 obo 925-606-0755

External USB Cyclone CD-RW unit. Used very little. \$50 obo. 925-606-0755

Microsoft wireless base station - for wireless home networking. Includes manual, installation CD, etc. \$50/OBO. 925-485-1988

Drake HF Ham Station: R4/T4X pair with AC4/MS4 speaker-power supply. Includes FR4 digital display and D-104 Microphone, all manuals. \$350 925-447-9273

GIVEAWAY

Camper & Oven - Cab over camper for full size pick up with full bed, water tight. Oven - wall unit - Jennaire, 30 inches wide, old but hardly used. 925-455-1355

Free succulent plants, several varieties 925-447-2752

Tires, two (2) trailer 480-12, one new & one lightly used. Call 925-447-9649

26 inch 10 speed bike,, little tykes play set,, floor tile, 9 inch, about 150 square feet 925-449-1464

FREE Laying hens - 21 hens, lays brown and green shelled eggs. Extra feed and watering cans. 510-357-5982

MTD Lawn mower, 4HP B&S engine, has not been used in years. Refurbish or use for parts. 925-449-0941

Free Ginger rock located in Fremont. You haul. 510-792-1538

HOUSEHOLD

Bruener sofabed and love seat matched set, sofabed opens up to queen-size bed, very attractive and in excellent condition. \$550 for both. 925-361-7111

Dining Room Set, Century Country Classics. Solid maple oval table with leaf and 6 chairs. \$600. 925-735-1616

Shower Stall - corner unit, 38 inches, still in box, one-half price - \$150. 925-455-1355

25in. color tv w/remote. Good working condition \$75 OBO; bookshelf AM/FM stereo w/phono and cassette player, good condition, \$30 OBO. 925-294-1576

Monitor stand, Kensington Spinstation, with rotating storage system. Brand new, still in box. Paid \$40. \$15. 925-648-0671

Resolute brand free standing wood stove. \$375/OBO. 925-245-1114

Large corner computer desk (2 pieces)- \$400.00 Neg./computer desk with hutch - \$40.00/19 inch Sony Flatscreen Trinitron monitor - \$200.00. 209-832-3496

Dining room table + 6 chairs - Breuners, like new condition, \$850 or BO. 925-373-1249

Cherry Provincial bedroom set; twin beds, night stand, dresser, chest of drawers-excellent cond. \$500. Cherry Provincial coffee & end table. \$90. 925-455-4027

General Electric - Refrigerator - 21.7 cubic ft., Almond color, freezer on top, great condition. \$100. 925-443-7656

Headboard combined armoire furniture fits Queen. Must see! \$500. 209-475-0405

27 GE Thermal Oven/Microwave built-in. Brand new! Never installed, still in box. Retail for \$1599 asking \$699 OBO. 925-449-9017

Baby: Baby swing, barely used and in great shape \$40;Infant car seat w/base \$30;Walker \$15. 209-239-2377

Twin mattress set with adjustable metal frame, excellent condition, \$50 510-517-6715

Kenmore Extra large capacity Gas dryer 70 series.Bought new only used for six mos.White w/light blue trim.excellent cond.250.00 obo. 925-783-5607

Queen size black lacquer bedroom set. Platform bed with storage headboard, dresser, 1 side table. Excellent condition - \$475.00 510-745-7301

MISCELLANEOUS

Sears heavyduty sander (\$30), scroll saw (\$30), induction tune-up dwell meter, induction timing light (\$45 both) 925-361-7111

Small TV, black, DAEWOO, incl. room antenna, almost new (bought august 2003), paid \$70, offer \$40, available end of october, call after 7pm 925-518-6207

49er Tickets(4) vs Tampa Bay Bucs(Super Bowl Champs) Sun Oct.19 @1:15pm Great End Zone seats UR11 \$75ea/obo 209-499-3793

4 Jonny Lang tickets at the Warfield nov1 great seats 40.00 dollars each. 209-836-9051

Sears 11HP Auto Trans elec start garden tractor, 3 pt hitch. With 8hp rotor tiller attachment. \$900 209-833-6452

EUCALYPTUS STARTERS - Rooted ready to plant. 12in tall in 16oz cups. Will grow very fast. \$1 ea. 925-447-6192

Sharks Tickets vs. Ottawa 10/18 \$62/ea. Cats (Musical) Tickets 12/20 \$84/ea. 408-768-5070

Used 12 ft 3-legged wooden picking or pruning ladders in good condition. \$20.00 each. 209-892-6993

Estate Sale oak desk w/chair \$100; industrial sewing machine \$450; radial arm saw \$100; rototiller \$400; cedar closet \$400. All excellent condition. 510-357-5982

MOTORCYCLES

1998 - Harley Davidson 1200 XLH Sportster. Upgrades/extras \$7,000 Placerville. 530-644-7820

2001 - Kawasaki EX500R Ninja, 2,890 miles, violet color, asking \$4,000 925-447-8036

1997 - Honda CR125R NEW rear tire,RAD valve,chain,front&rear sprockets.2 sets plastics&seats.Many extra parts.\$2K O.B.O.After6PM 209-599-7036

2000 - Honda Nighthawk CB750 700 total miles, Fairing and Saddle Bags \$5000 OBO 209-836-3069

1982 - Kawasaki CSR 305 street bike 3800 miles runs very good. New battery. \$900.00 BO 925-292-1785

2002 - 2002 Suzuki GSXR750,Yosh Full Syst./Fender Elim. Kit/Gearred 1 Down On Front Sproket/Flush Mount Blinkers/Yellow/Black/Silver, \$7500, OBO 925-580-2858

1989 - Harley 883 Sportster 16K miles; customized for a sleeker look; all original parts available. Electronic photo available. \$4,200 510-793-7074

MUSIC INSTRUMENTS

Suzuki violin, 1/4 size, Wolf violin headrest (1/2 size), Violin Strings, all like new. \$150 925-361-7111

Beautiful upright piano with natural wood finish. Older Schulhoff and Sons model. Some bridge pegs loose. \$100 OBO 925-443-2448

6 ft. Fischer grand piano; walnut case; new keyboard and reconditioned on inside; great condition; \$5,000 or best offer. 925-980-1895

PETS & SUPPLIES

Horse Boarding-Inside Stalls or pasture, riding arena, paddock-Feeding & cleaning available. \$75.00 to \$200.00 per month. 925-240-6311

RECREATION EQUIPMENT

Slip stick (\$10) and focus target (\$20) heavy bag attachments by Ringside. 925-455-8609

Dressage Saddle by Campbell Saddlery: 17 inches, medium tree, less than 1 yr. old, very comfortable, asking \$800. For more details, please call. 925-373-8895

Stearns shorty wetsuit 2mm/3mm mens large. \$30 925-455-8609

Camp stove, propane, fits in counter, \$10 925-449-1464

SADDLE: 17 inch, Crosby Equilibrium All Purpose Sadle, excellent condition, BO 925-634-2307

SPA Charisma model, two person, \$850.00 and treadmill \$200.00 for sale 209-492-0270

RIDESHARING

Express your commute, call 2-RIDE for more information or visit <http://www-r.llnl.gov/tsmp>.

Tracy - ACE train senior ticket. Tracy to Vasco Rd. Cost \$55.80 will sell for \$45.00 or BO 209-832-5463, ext. 2-7401

BERKELEY - Rider/driver needed to complete a four person carpool. Leave Berkeley at 7am. Leave LLNL at 4:40pm. 510-524-8332, ext. 2-5949

Modesto Park and Ride @Mall - Immediate opening in luxury vanpool, captain seats, reading lights, cel phone avail 8-4:45 ridership-based fares, 209-544-2236, ext. 3-3194

SHARED HOUSING

Livermore - Room for Rent \$550, plus 1/3 utilities, 1 mile to LLNL. No Smoking/Pets 925-989-6138

Livermore - furnished room for rent. Clean/quiet. \$550.00/month. Share utilities 1/3. Mature adult. No pets/no smoking. Deposit required. 925-449-1128

Modesto - Room for rent \$450.00, includes utilities. Kitchen and laundry privileges. No smoking or pets. 209-492-0270

Livermore - Room for rent with private bath in 4 bdrm. home. Full privileges, N/S. \$600 +1/2 Util.+ Dep. Must like dogs. 925-294-8765

SERVICES

Painting and texturing, journeyman painter, interior and exterior. Free bids. 925-487-6643

FIREWOOD: Get your dry, seasoned firewood NOW before the rain starts. Will deliver if necessary 925-634-2307

Rags to Britches Embellished Jeans...babies to adult sizes To book a Jean party or foe more info, 925-606-6176

TUTORING. Jr. HS through Undergrad. math, physics, chemistry, biology. 20 yrs. exp. Learning is fun. 925-373-8227

TUTORING in high school and college math and chemistry. 925-443-2095

Certified massage therapist. Hundreds of happy clients using neuromuscular therapy. Gift certificates available. Two locations or in home service. 510-366-9767

Nanny-experienced. I will love your kids! Looking to serve a family in Tri Valley Area. FT/PT Live Out. Great Refs, Avail. ASAP, Own Car. 925-443-5714

Love Bug Daycare - Tracy area, loving environment, flexible times available. 209-832-3428

State-of-the-art medical care for your cat, administered with a strong dose of love. Early morning drop-off available. 925-606-0191

Heating and air conditioning installation and service. Certified installer, free bids. 925-828-6190

TRUCKS & TRAILERS

2000 - Sandpiper Travel Trailer:2 br, 37ft w/ 14ft pwr slide out. Sleeps 8 adults. Call for details \$18,500 530-644-7820

1978 - Chevy 4X4, 4in lift kit, new motor w/only 200 miles, newer auto transmission, needs some body work \$3,500.00 925-443-0417

1994 - 1994 Chevy Astro,cc,ps,pb,dual ac, cd,pdl,tilt,tow pkg, 8 pass, clean,abs. 176K good cond. reliable \$2,500 209-833-1719

1994 - Ford Explorer 4X4, AC, Tow PKG, Turquoise, New tires. 126K miles, \$3500 best offer 925-600-8592

1990 - Ford F250 460 eng, man trans, 8ft bed, 85k mi, shell, rack, hitches \$6500 925-447-7912

1977 Chevy Bonanza 4x4, New 35 inch tires, rebuilt 350. Asking 3000.00 209-518-1731

Fiberglass shell for full size, short bed pickup. White with tinted windows and blue carpeted headliner. Good cond. \$450 BO. 925-634-9973

VACATION RENTALS

1 bedroom condo available Thanksgiving week (11/13-19)at Olympic Village Inn. Sleeps 4, fully furnished, ski slopes. Reasonable rate 925-361-7111

Soooo cute beach cottage in Santa Cruz. 2 bedr, 2 bath, sleeps 7-8. 4 blks to ocean.Fully equipped kitchen, spa. 925-245-1114

Great four bedroom mountain home 20 miles from Bear Valley Ski Resort on Hwy. 4 - above Arnold. Taking winter bookings now. 925-245-1114

Maui, HI - Kahana Reef oceanfront 1BR/1BA condominium. Beautiful two-island view, oceanside pool, and BBQs. Low LLNL rates for year-round reservations. 925-449-0761

Manzanillo Mexico - 3 bedroom, 5 bathroom house with an ocean view and swimming pool. 510-582-1489

Gualala - Ocean Bluff Getaway, sleeps 4+\$180/nite 10% discount for LLNLers. Incredible whitewater ocean views. Mendocino county, just north of Sea Ranch. 925-606-1845

WANTED

wanted: futon in good condition will pay up to \$50. 209-824-2653

Six matching kitchen chairs. Wood or iron ok. With or without cushions ok. Willing to refinish. Digital pict. would be great. 925-373-7658

Want to buy July, 2003 Sunset Magazine (Bay area coverage). Will pay magazine stand price for intact magazine. 925-229-2240

Wanted 4 (or 5) tires in good condition similar to P265/70R16 for my Toyota TRD Truck. 925-784-8493

49er tickets to Nov. 17 Steelers Game, need 4, need not be together, plus parking pass. Will pay face value. 925-443-5641

Expiring frequent flyer tickets. Missing my daughter in Washington DC. Will fly last minute if we can agree on price. 925-443-3076

Free or inexpensive go-kart frame for father/son project. 925-443-9182

US or foreign stamp collections. Big, small, any size considered. Evenings call 925-449-1294

2-person canoe to rent or buy. 209-835-4519

Services and merchandise listed in *Newsline* are not guaranteed. It is up to the buyer to scrutinize services purchased.

Due to space limitations, *Newsline* may withhold ads that have already run. They will still appear on the Web.



# AROUND THE LAB



## Health Services to measure success of on-time service

Health Services is half-way through a six-month pilot program called “On-TIME” Service (Timely Intervention & Medical Excellence), which is designed to reduce patients’ wait times and better meet their needs for clinical non-emergency care. Health Services will be measuring its effectiveness in the near future to determine if the program should be formally implemented.

On-TIME Service is designed to balance the convenience and flexibility of drop-in

visits with the efficiency of appointments to the medical clinic.

Here’s how it works: A worker eligible for HSD services calls HSD, 2-7459, when he or she wants to be seen by a medical care provider but doesn’t have an appointment. An appointment will be arranged for the same day, the next day or within a week, based on the health concern, the medical urgency and the individual’s schedule.

As always, acute injuries and illnesses

are seen first. Drop-ins with non-acute conditions will still be seen, but they may have to wait so HSD can honor the appointment times of those who have called ahead. Every effort is made to see individuals with an appointment on schedule. For questions, comments or more details, call Carol Turner, 4-4516, or see the Website at <http://www-r.llnl.gov/healthserv/News/on-time.html>

For medical emergencies, immediately call 911.

### KECK

*Continued from page 1*

with the high resolution of adaptive optics.

To overcome the restriction of few stars bright enough to use, the Keck Observatory began working with the Laboratory in 1994 to develop an artificial guide star system. By using a laser to create a “virtual star,” astronomers can study any object in the vicinity of much fainter (up to 19th magnitude) objects with adaptive optics and reduce its dependence on bright, naturally occurring guide stars. Doing so will increase sky coverage for the Keck adaptive optics system from an estimated one percent of all objects in the sky, to more than 80 percent.

The resulting image, captured by the NIRC2 infrared camera on Sept. 20, was the first demonstration of a laser guide star adaptive optics system on a large telescope. When

complete, the system will mark a new era of astronomy in which astronomers will be able to see virtually any object in the sky with the clarity of adaptive optics.

“Now astronomers can study almost the entire sky with the high resolution of adaptive optics,” said LLNL’s Deanna Pennington, systems scientist and engineer for the Keck laser system.

In January 2001, after more than seven years in development, the Keck and LLNL team celebrated the successful commissioning and demonstration of the Keck laser guide star system. The artificial star resulted when light from a 15-watt dye laser causes a naturally occurring layer of sodium atoms to fluoresce about 90 km (56 miles) above the earth’s surface. It would take another two years of sophisticated research and design before the laser system could be integrated into the Keck II adaptive optics system.

In the early morning hours of Sept. 20, the

system locked on a 15th magnitude star, a member of a well-known T Tauri binary called HK Tau, and revealed details of the circumstellar disk of the companion star. It was the first time an adaptive optics system on a very large telescope had ever used an artificial guide star to resolve a faint object.

Throughout the evening, the laser guide star held steady and bright, shining at an approximate magnitude of 9.5, about 25 times fainter than what the human eye can see, but ideal for the Keck adaptive optics system to measure and correct for atmospheric distortions.

Additional work is under way before the Keck LGS AO system can be considered fully operational. The Keck LGS AO system will be available for limited shared risk science next year, with full deployment to the Keck user community in 2005.

The LLNL laser team is made up of Pennington, Curtis Brown and Pam Danforth.

### CAMPBELL

*Continued from page 1*

glass is a phosphate-based material that is far more difficult to melt and polish. The challenge for laser glass scientists is to create meter-sized slabs of glass that are free of impurities and have near-perfect optical quality. Elimination of impurities is essential to achieving NIF’s high output energies. The optical quality ensures that the beams can be properly focused on the target.

One of the major challenges for Campbell and his laser glass team was to come up with a process to manufacture glass slabs that is reliable, reproducible and affordable. This team, which is comprised of a core group of chemical engineers, chemists and materials scientists at LLNL, as well as researchers from two lead-

ing glass companies, developed a continuous-pour method of creating the NIF’s high-quality phosphate glass.

The laser glass for NIF is manufactured 20 times faster than for Nova, with much higher quality, and for about one-fifth the price.

The George W. Morey Award is named for a pioneer in the scientific study of glass. Morey, of the Carnegie Institution of Washington, systematically studied the composition and properties of a wide range of glasses. Much of this work is summarized in his classic 1938 textbook “Properties of Glass.”

Campbell stated: “The Morey award has special meaning to me because data from Morey’s book helped solve one of the first glass research problems I was given back in 1980. In fact, I still refer to his book on occasion, although my copy has become dog-eared over

the years.”

Campbell may be best known at LLNL for his work on laser materials, but nearly 10 years ago, he achieved notoriety across the Lab, albeit also producing a blemish in his personnel file.

While supervising the Beamlet project in 1991-94, he vowed to swim across the Lab’s Drainage Retention Basin, if his staff achieved “first light” on schedule.

After Beamlet’s first shot on Sept. 18, 1994, Campbell made good on his promise. In front of a large audience gathered along the shore, he swam through the murky water. His achievement earned him a reprimand from Lab management, which, for safety reasons, does not permit human activities in that body of water. “I guess that means my record time for crossing that daunting body of water will remain safe,” Campbell said.

### CAFÉ

*Continued from page 1*

effort to prepare for this transition, the Central Café will be closed early on Friday, Nov 7, at 1 p.m., instead of usual closing time of 1:30 p.m.

Beginning Nov. 10, the existing Central Café will be re-named the “Hard Hat Café.” The main south entrance to the café will be closed and employees will be directed to the dining room entrances. The Hard Hat Café will serve employees from Nov. 10 until the new café opens in late January 2004.

The daily menu at the Hard Hat Café will

include a Market Carvery entree, hot soup, chili, salads, sandwiches and a special feature of the day. The special feature will rotate between Menutainment, like a tossed-to-order pasta or stir fry, to themed barbecues like a southwestern barbecue.

Check out the weekly Food of the World Theme Days. On the Mexican Day, one station will feature chiliquilis, tamales and enchiladas, while another will feature tostada salads and soft tacos. On the Pan Pacific Day, customers will enjoy a station with six types of dim sum, hot and sour soup, and another station with teriyaki chicken, beef satay and great side dishes.

There will be plenty of seats and a wide

variety of food featured during the transition. Theme days and specials for the customers will be held during the time the Hard Hat Café is open. The South and West cafés will continue to be full service during the construction period.

Significant progress has been made by W. E. Lyons Construction Company on the construction of the new Central Café. W. E. Lyons reports they are close to 70 percent complete, with the physical construction expected to be completed by Nov. 26. The move in and activation of kitchen equipment and dining furnishings will take place during December and January. The new Central Café is scheduled to serve its first meals in late January 2004.



## R&D 100

*Continued from page 1*

this year, the Laboratory has now captured 97 such awards since 1978. This year, Department of Energy (DOE) labs won a total of 36 R&D 100 awards.

This year represents the seventh time that Laboratory researchers have won six R&D 100 awards in a single year (other years were 2002, 1999, 1994-96 and 1991). The highest total of R&D 100 awards won by Lab employees in a single year is seven, and that has happened in four different years (1987, 1988, 1997, 1998).

Other DOE laboratories winning R&D 100 awards this year were: Los Alamos National Laboratory, eight; Sandia National Laboratories, seven; Oak Ridge National Laboratory, four; Argonne National Laboratory and Pacific Northwest National Laboratory, three each; Lawrence Berkeley National Laboratory, two; and Idaho National Engineering and Environmental Laboratory, the Westinghouse Savannah River Site and the National Renewable Energy Laboratory, one each.

### Protecting against bioterrorism

Scientists from Lawrence Livermore and Los Alamos national laboratories, with a New York-based firm, Rupprecht and Patashnick Co. Inc., developed the Biological Aerosol Sentry and Information System, or BASIS, to rapidly detect the airborne release of biological agents.

The BASIS technology, which was deployed in support of security operations for the 2002 Winter Olympics in Salt Lake City, reduces the time for detecting a bio-aerosol release from days or weeks to less than a day.

With faster detection, public health officials have more time to act, and as BASIS project developers note: "The early notice could mean the difference between life and death for people in any contaminated area."

Since the BASIS technology has been deployed, it has performed about 400,000 diagnostic tests of complex environmental samples, with no false alarms.

The Livermore team members who helped develop BASIS hail from four directorates — Nonproliferation, Arms Control and International Security, Biology and Biotechnology Research Program, Computations and Engineering. They include: Julie Avila, Jackie Cofield, Linda Danganan, Patsy Gilbert, Bruce Henderer, Dennis Imbro, Robert Johnson, Paula McCready, Kris Montgomery, Virginia Montgomery, Linda Ott, Richard Parker, Paul Sargis, Evan Skowronski, Tom Slezak, Cheryl Strout, and Mark Wagner. Another 50-70 LLNL employees have been involved in BASIS deployments to U.S. cities.

### Aiding the aviation industry

Researchers from LLNL and Metal Improvement Company Inc. of Paramus, N.J., have developed a revolutionary approach to shaping large-panel structural components for aircraft.

The Lasershot Precision Metal Forming process allows aircraft parts to be formed at thicknesses not previously possible and permits fewer processing steps in panel forming and aircraft assembly.

Another advantage of the Lasershot technique is that the procedure produces a six-fold smoother surface, significantly reducing the amount of surface treatment needed.

The capability to precisely form large, single-panel structural components cannot be achieved by any other process, and will substantially reduce aircraft design weight, which will in turn increase payload capacity and fuel efficiency.

Among the aircraft parts that can be produced with the new process are vertical stabilizers, panels, rudder panels, wing skins and winglets.

Livermore researchers who helped develop this technology, from the Laser Science and Technology Program and the Engineering Directorate, are: Hao-Lin Chen, Andre Claudet, Lloyd Hackel, John Halpin, Tania Zaleski and former Lab employee C. Brent Dane.

### Improving eye disease treatment

Five Livermore employees are part of the six-institution team that pioneered a technology to enhance vision and improve the early diagnosis and treatment of retinal diseases.

Known as the Micro-Electro-Mechanical Systems (MEMS)-based Adaptive Optics Phoropter, this breakthrough utilizes advances from adaptive-optics technology, also used for the world's largest telescopes, and



Chris Ebbers (left) and Vernon Kan hold the high-average-power electro-optic Q-switch, which won an R&D 100 Award.

S&TR

## How to win an R&D 100 award

The 2004 kickoff workshop on "How to Win an R&D 100 Award" is scheduled for Tuesday, Dec. 2, in Bldg. 170, room 1091 at 10 a.m. The presentation will cover entry criteria and the submission process, assistance available through TID/IBIS, and insight from both a previous R&D 100 Award winner and judge. For more information, contact Lisa Chartrand, 2-2297.

micromachining.

It is anticipated that the MEMS-based Adaptive Optics Phoropter may, in time, replace the traditional phoropter used by ophthalmologists and optometrists and permit them to accurately diagnose and treat patients with high-order visual aberrations. These aberrations — such as coma and spherical aberrations — have been difficult to measure and correct.

With such an instrument, clinicians could measure and automatically apply the proper corrections, then allow patients to immediately see the actual improvement in their quality of vision and offer feedback.

With an imaging capability, the MEMS-based Adaptive Optics Phoropter would also permit the more successful detection, diagnosis and treatment of retinal diseases — such as retinitis pigmentosa, glaucoma, diabetic retinopathy and macular degeneration — that cause blindness.

The award is shared by LLNL, Sandia National Laboratories, the University of Rochester, Wavefront Sciences, Boston Micromachines Corp. and Bausch & Lomb.

Livermore researchers on the team were drawn from the Physics and Advanced Technologies, and Engineering directorates and included: Abdul Awwal, Brian Bauman, Steve Jones, Kevin O'Brien, Scot Olivier, and former LLNL employee Don Gavel.

### Controlling high average power lasers

A team of Livermore scientists has invented an instrument that allows fast optical switching of high-average-power lasers for machining, energy research and national defense applications.

The device, known as a "High-Average-Power Electro-Optic Q Switch," offers a tenfold increase in the average power handling capability for lasers to 300 watts instead of only 30 watts.

This technology was developed as part of research for the LLNL Mercury laser project, which is a prototype of a high-average-power fusion laser driver, designed to study the fundamental interactions of light and matter. The Mercury laser system will produce 100-joule pulses at an average power of 1,000 watts.

Experimental fusion laser system architectures, such as the Mercury laser, require the electro-optic cell to let light through when desired and to prevent the laser system from being destroyed by unwanted laser light (amplified laser light at the wrong time traveling in the wrong direction).

Members of the award-winning team from the Laser Science and Technology Program and the Engineering Directorate are: Christopher Ebbers, Vernon Kanz and former Laboratory employee Hitoshi Nakano.

### Producing next-generation computer chips

A revolutionary lithography system developed by

scientists at three DOE national laboratories and one company will enable dramatic improvements in computer chip speed and memory during the next decade.

The new tool, developed by researchers from LLNL, Sandia National Laboratories, Lawrence Berkeley National Laboratory and Northrop Grumman Space Technology/Cutting Edge Optronics, is called the Extreme Ultraviolet Lithography (EUVL) Full-Field Step-Scan System.

This system is the only fully integrated system in the world that prints 50-nanometer (billionths of a meter) features over the full field size of computer chips, nearly half the size as the features possible with other systems.

Because of the successful demonstration of the EUVL step-scan system and other advances, EUVL has been selected as the best candidate technology by international semiconductor organizations, such as International SEMATECH and the Semiconductor Industry Association, for the patterning of next-generation microprocessors.

Livermore team members from the directorates of Physics and Advanced Technologies, Chemistry and Materials Science and Engineering are: Regina Soufli, Sherry Baker, former employee Kenneth Blaedel, Lloyd Bradsher, Henry Chapman, Carl Chung, James Folta, Frederick Grabner (retired), Layton Hale, former employee Russell Hudyma, Michael A. Johnson, Richard Levesque, former employee Claude Montcalm, Nhan Nguyen, Donald Phillion, Mark Schmidt, Franklyn Snell, Gary Sommargren, Eberhard Spiller, Donald Sweeney, John S. Taylor and Christopher Walton.

### Solving a tough challenge for computer chips

One of the greatest technical challenges for the successful implementation of the EUVL technology is the need for nearly defect-free reticles or masks. (The patterns of the masks are replicated on computer chips and shrunk fourfold).

A team of Livermore scientists developed the "Ton Beam Thin Film Planarization" process, which uses a thin film coating and ion-beam etching technique to generate nearly perfect surfaces.

The key challenge in developing this technology is to manufacture masks with only one defect for every two six-inch-square masks, which is one of the most stringent defect specifications ever required for a coating process.

This requirement would be equivalent to having only a single defect the size of a basketball on a flat surface six times the size of the state of Illinois.

Work for this effort, as for the lithography system, was funded under DOE's largest-ever cooperative research and development agreement, a \$250 million pact involving three national labs (Berkeley, Livermore and Sandia), Intel and five other companies.

Members of the winning team are from three directorates, Physics and Advanced Technologies, Chemistry and Materials Science and Engineering, and include: Paul Mirkarimi, Sherry Baker, Victor Sperry, Eberhard Spiller and Daniel Sterns.



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